

# On "rattus" rats of the coasts and islands of Malacca Straits<sup>1</sup>

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## SYSTEMATIC

*Rattus rattus kunduris* subsp. nov.

*Rattus rattus payanus* subsp. nov.

*Rattus rattus jemurris* subsp. nov.

*R. rattus jalorensis*<sup>2</sup> is the indigenous field rat of the greater part of the Malay Peninsula and most of the mainland of Sumatra but a darker form, *rhionis*<sup>3</sup>, described from Bintang Island in the Rhio Archipelago, extends to Palembang on the east side of Sumatra<sup>4</sup>. Dark rats occurring sporadically in south Johore<sup>5</sup> must be regarded as *rattus* > *rhionis* as their skulls have not the large average size of true *rhionis*.

*R. r. rhionis* is a very distinct race. It is a sleek rat, darker and larger than *jalorensis*. The skull of the type measured 42 mm. in its greatest length and ten adults give a range of 43–45 mm. for the same measurement. A few *jalorensis* from the southern part of the Malay Peninsula have the total length of the skull about 42 or 43 mm. but most are rather smaller than this<sup>6</sup>. Occasionally the skull is between 44 and 45 mm. in total length but such large animals are exceptional.

The range of *rhionis* is not yet defined, but in the Rhio Archipelago it certainly extends from Bintang in the east to Bulan in the west and Galang in the south. Some specimens from Galang and Bulan are less brown and considerably more blackened above than animals from Bintang and Battam but those from the first two mentioned islands are fresher skins. The rats of the islands of Sugi, Durian, Karimon and Kundur, all lying to the west of Bulan have been listed as *neglectus* (i.e. *jalorensis*) by Dammerman<sup>7</sup>.

<sup>1</sup> Here considered as extending from Pulau Terutau in the north to Pulau Kundur in the south.

<sup>2</sup> *Mus jalorensis* Bonhote, Fasc. Malayenses, Zool., pt. 1, 1903, p. 28 (Jalor, Peninsular Siam).

<sup>3</sup> *Mus rattus rhionis* Thomas and Wroughton, Ann. Mag. Nat. Hist. (8) iii, 1909, p. 441 (Bintang Island, Rhio Archipelago).

<sup>4</sup> Kloss, Treubia, 2, 1921, p. 124.

<sup>5</sup> They have been referred to *jarak* by Bonhote in P. Z. S., 1906, p. 10, and to *griseiventris* by Robinson and Kloss in Journ. Fed. Mal. States Mus., iv, 1909, p. 122.

<sup>6</sup> For the measurements of a series of *jalorensis* from Sumatra see Rob. and Kloss, Journ. Fed. Mal. States Mus., viii, Part II, 1918, p. 63 under "*neglectus*".

<sup>7</sup> Treubia, viii, 1926, p. 317.

We have large series before us from some of the most westerly of the islands. While it is true that they are quite distinct from *rhionis* they cannot be placed in *jalorensis* and may be differentiated as:—

*Rattus rattus kunduris* subsp. nov.

*Mus* near *rattus*, Miller, Proc. U. S. Nat. Mus., xxxi, 1906, p. 266.

*Mus* "*rattus*", Lyon, Proc. U. S. Nat. Mus., xxxvi, 1909, p. 490; Thomas and Wroughton, Journ. Fed. Mal. States Mus., iv, 1909, p. 122.

Like *jalorensis* of the Malay Peninsula and Sumatra but larger; the pelage harsher.

Type:—Adult male, skin and skull, collected on Kundur Island, Rhio Archipelago, on 21st Aug., 1908, by H. C. Robinson and E. Seimund, S. M. No. 1694/08.

External dimensions (taken in the flesh):—Head and body 179 mm., tail 195 mm., hind-foot 39 mm., ear 22 mm.

Skull:—Total length 46 mm., condylo-basilar length 40.6 mm., palatilar length 22 mm., diastema 13.1 mm., zygomatic breadth 22.1 mm., upper molar row (alveoli) 7.1 mm., palatal foramina 8 mm., length of nasals 17 mm.

Remarks:—This rat combines the pale colour of *jalorensis* with the large size of *rhionis*. The skulls of six adults from Karimon measure:—greatest length 44.9–46.5; palatilar length 21–22.5; zygomatic breadth 21–22.5; upper molar row (alveoli) 7–7.5 mm.

We can see no significant differences between specimens from Little Karimon Island (8 specimens); Karimon Island (44 specimens); Merah Island near Karimon Island (5 specimens); Kundur Island (7 specimens) and Tulang Island near Kundur (3 specimens). There is a possibility that this is also Dammerman's *neglectus* of Sugi and Durian Islands.

This form is rather like *R. r. batin* Robinson<sup>1</sup>, from the outlying island of Mapur or Panjang in the east of the Rhio Archipelago but it is larger: *batin* is nearer to *jalorensis* but has the pelage hispid and a marked development of the long black piles on the lower back.

The first form to be described from an island in the Straits of Malacca was *jarak*<sup>2</sup> from Pulau Jarak about forty miles west of the mouth of the Perak river.

*R. r. jarak* is a good race although its describer wrongly suggested that it belonged to the *muelleri* group. It is darker than *jalorensis*: the upperparts are browner and less fulvous and the underparts are usually suffused with grey although sometimes white as in *jalorensis*.

<sup>1</sup> Journ. Fed. Mal. States Mus., vii, 1916, p. 66.

<sup>2</sup> *Mus jarak* Bonhote, Journ. Fed. Mal. States Mus., i, 1905, p. 69.

There is very little, if any, difference in size between the two forms. The largest of a long series of adult skulls of *jarak* measures 43 mm. in its greatest length; fifty-five adult males give a range of 38.9—42 mm. for the same measurement.<sup>1</sup>

The type of *jarak* had the tail shorter than the head and body but this is not always the case and usually the tail is a little longer than the head and body as in *jalorensis*.

*R. r. jarak* is smaller and darker than *kunduris*; smaller and less blackened than *rhionis*.

*R. r. rumpia*<sup>2</sup> from Pulau Rumpia, Sembilan Islands, off the Perak coast is a dark rat like *jarak* but it is much larger and the skulls of adults range from 46 to 48 mm. in greatest length. The type does not represent the maximum development of the race. Other subspecific characters are given in the original description.

Six rats from Pulau Lalang in the Sembilan Islands also represent a dull, dark race but unfortunately only two of the specimens are adult. One of these is without a skull and the only skull is somewhat broken.

The adults have the hind-foot measuring 36 and 34.5 mm. The greatest length of the skull (worn teeth) is about 43.5 mm. The Lalang rat can therefore be regarded as either a very large *jarak* or a small *rumpia*, the latter preferably, on geographic grounds.

Rats also occur on other islands in the southern part of the Straits of Malacca. The form from Pulau Berhala, a small island about forty miles southwest of Pulau Jarak and twenty-four miles from the Sumatran Coast seems inseparable from *jalorensis* of the mainland.<sup>3</sup> A series of fourteen skins from Pulau Jemur in the Arca Islands is distinct and must be separated on colour.

#### *Rattus rattus jemuris* subsp. nov.

Like *jalorensis* of the Malay Peninsula and Sumatra but the upperparts paler, distinctly more buffy and less brown.

*Type*.—Adult male, skin and skull, collected on Pulau Jemur, Arca Islands, Straits of Malacca on 13th Nov., 1906. S. M. No. 1876/07.

*External measurements (taken in the flesh)*.—Head and body 180 mm., tail 192 mm., hind-foot 37 mm., ear 21 mm.

*Skull*.—Total length 43 mm., condylo-basilar length 39 mm., palatal length 22 mm., diastema 13.4 mm., zygomatic breadth 20.2 mm., upper molar row (alveoli) 6.9 mm., palatal foramina 8 mm., length of nasals 15 mm.

<sup>1</sup> An intensive study of the measurements of *jarak* is published by Robinson in Journ. Fed. Mal. States Mus., 1907, 1916, p. 7.

<sup>2</sup> *Mus rattus rumpia* Rob. and Kloss, Journ. Fed. Mal. States Mus., iv, 1911, p. 169.

<sup>3</sup> *Rattus rattus neglectus* Chasen and Kloss, Misc. Zool. Sumatrana, xxvii, 1928, p. 1.

Rats from Pulau Pisang off the west coast of Johore are like *jalorensis* but run rather large: the pelage is also more hispid. Adults have the greatest length of the skull commonly 43 or 44 mm., but they do not attain the size of *kunduris* and can conveniently be regarded as *jalorensis* > *kunduris*.

No white-bellied field rat has yet been taken in Singapore or on any of the smaller neighbouring islands.

The first race to be described from the islands at the northern entrance to the Straits of Malacca was *pannosus*<sup>4</sup> from Pulau Adang in the Butang Islands. This is a large race and by reason of its very coarse, shaggy pelage needs no comparison with any form mentioned above.

An aged female before us has the total length of the skull 49.1 mm.; upper molar row (alveoli) 8.6 mm.

Miller afterwards separated *pannellus*<sup>5</sup> from Pulau Rawi in the Butang Islands from *pannosus* on the following characters, "skull less robust, incisive foramina distinctly narrowed anteriorly, and teeth usually not so large ..... external appearance not appreciably differing". We have no material.

Rats from Pulau Langkawi and Terutau are smaller than the Butang Island forms and are very near to *jalorensis*. The largest skull (from Terutau) measures 43 mm. in its greatest length.

There is a tendency to large cheek teeth in the Langkawi race which has been named *viclana*<sup>6</sup> by Miller, and examples from Terutau and the smaller island of Dayang Bunting south of Langkawi are best placed with *viclana*. The field rat of Penang is *jalorensis*.

The rat on the tiny island of Paya, south-east of Langkawi and about sixteen miles from the coast of Kedah is quite distinct from *jalorensis*: it is a large form much more like *rumpia* from the Sembilan Islands than *jalorensis*.

#### *Rattus rattus payanus* subsp. nov.

Like *R. r. rumpia* but much darker.

*Type*.—Adult male, skin and skull, collected on Pulau Paya, Straits of Malacca, 24th April, 1915.

*External dimensions (taken in the flesh)*.—Head and body 188 mm., tail 198 mm., hind-foot 37 mm., ear 19 mm.

*Skull*.—Total length 46.2 mm., condylo-basilar length 40 mm., palatal length 21.7 mm., diastema 12.1 mm., zygomatic breadth 21 mm., upper molar row 7.3 mm., palatal foramina 7.2 mm., length of nasals 16.5 mm.

*Remarks*.—We only have three specimens of this new race but all are much darker on the upperparts than any of a large series of *rumpia* taken in several months throughout the year.

<sup>4</sup> *Mus pannosus* Miller, Proc. Biol. Soc. Wash., xiii, 1900, p. 190.

<sup>5</sup> *Ebimys pannellus* Miller, Smiths. Misc. Coll., 61, No. 21, 1913, p. 8.

<sup>6</sup> *Ebimys rattus viclana* Miller, Smiths. Misc. Coll., 61, No. 21, p. 13.